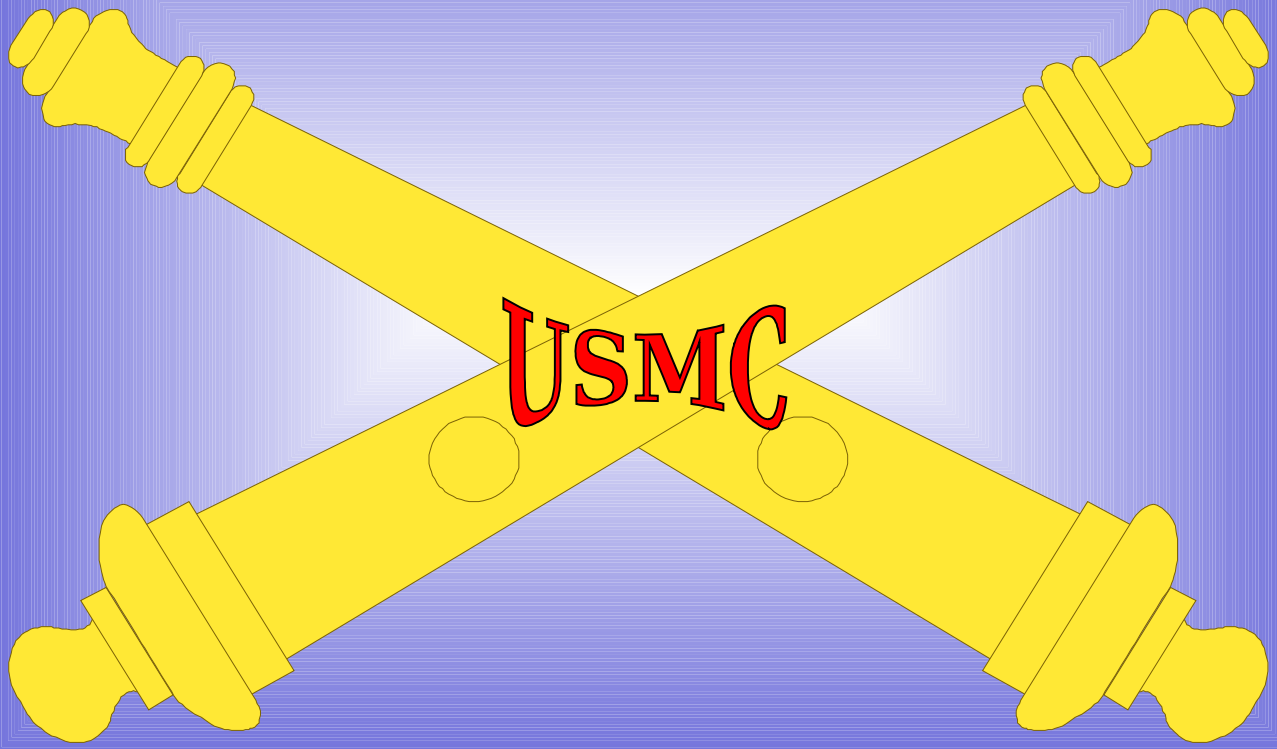
MARINE CORPS FIELD ARTILLERY FIRE CONTROLMAN COURSE

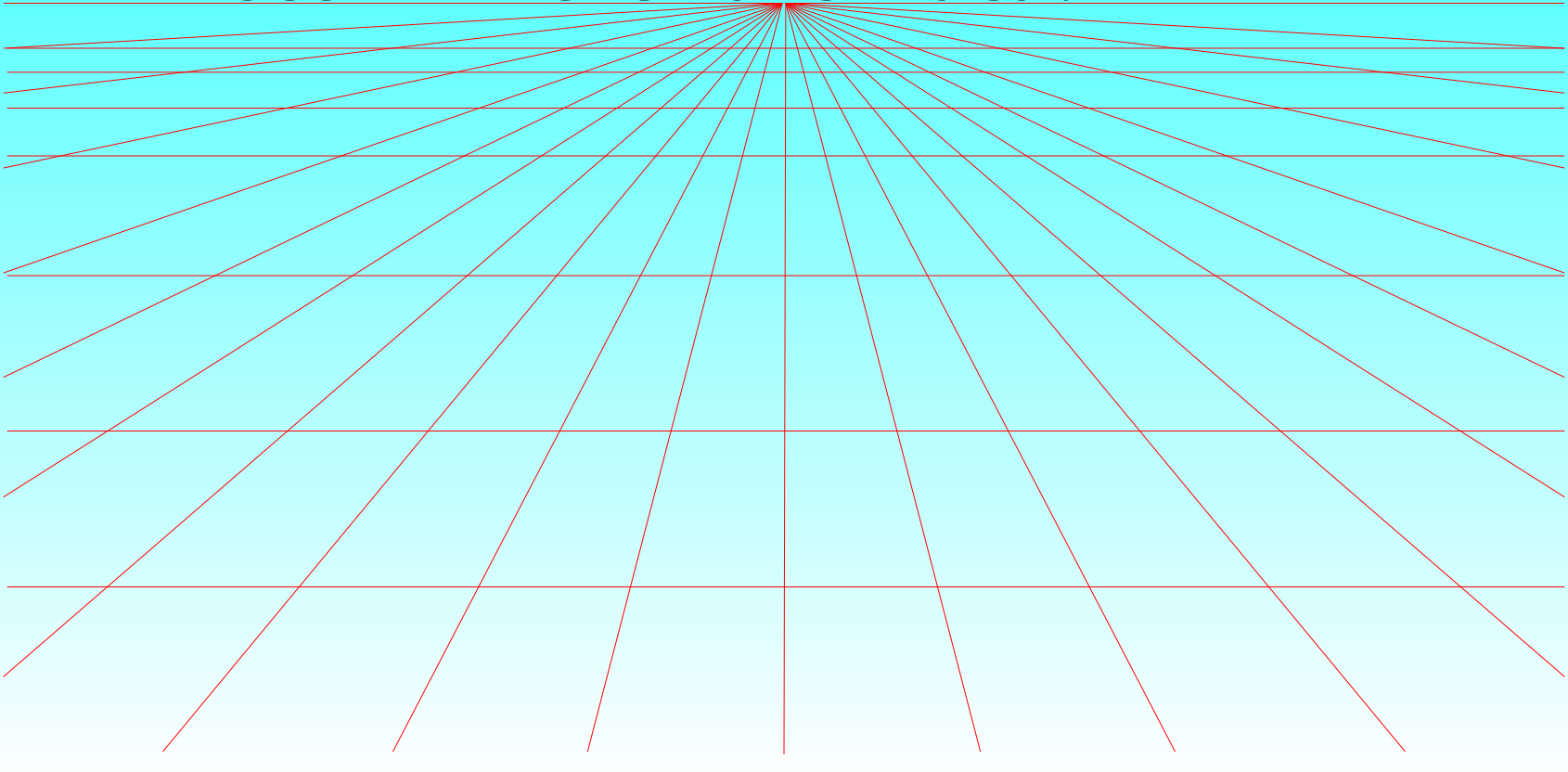


FIRING CHARTS

GD41FC TP-1

SURVEYED FIRING CHART

OBJECTIVE : To Construct a Surveyed Firing Chart, and Determine Chart Data.



DEFINITION OF A FIRING CHART

- A FIRING CHART IS A GRAPHIC REPRESENTATION OF A PORTION OF THE EARTH'S SURFACE USED FOR DETERMINING DISTANCE AND DIRECTION.
- THERE ARE VARIOUS THAT CAN BE USED FOR CONSTRUCTING A FIRING CHART.

DEFINITION OF A FIRING CHART

- A MAP, PHOTOMAP, GRIDSHEET OR SHEET OF PLAIN WHITE PAPER ON WHICH ARE SHOWN THE RELATIVE POSITIONS OF FIRING BATTERIES, REGISTRATION POINTS, TARGETS, AND OTHER DETAILS NEEDED IN DETERMINING FIRING DATA.

- **MAP:** **A DRAWING OF A PORTION OF THE EARTH'S SURFACE AS SEEN FROM ABOVE.**

- PHOTOMAP: **AN ACTUAL PHOTOGRAPH OF A PORTION OF THE EARTH'S SURFACE WITH GRID LINES OVERPRINTED TO SCALE.**

- **GRID SHEET:** **A SHEET OF PAPER WITH OVERPRINTED HORIZONTAL AND VERTICAL GRID LINES DRAWN TO SCALE.**

QUESTIONS

TYPES OF FIRING CHARTS

OBSERVED:

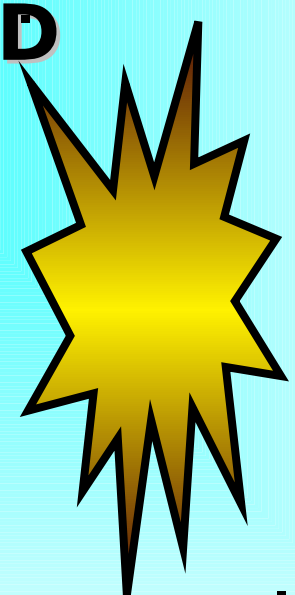
- ALL BATTERIES AND TARGETS ARE PLOTTED RELATIVE TO EACH OTHER.
- THESE RELATIVE LOCATIONS ARE ESTABLISHED BY FIRING.
- AN EXPEDIENT METHOD AND SHOULD BE USED UNDER EMERGENCY CONDITIONS ONLY.

SURVEYED:

- ALL LOCATIONS ARE PLOTTED.
- PLOTTED POINTS ARE IN CORRECT RELATION TO EACH OTHER AND REFLECT ACTUAL MAP COORDINATES.
- THESE LOCATIONS ARE BASED ON ACTUAL SURVEY OR MAP INSPECTION.

PURPOSE OF A FIRING CHART

- THE PURPOSE OF A FIRING CHART IS TO DETERMINE RANGE AND DIRECTION FROM THE GUNS TO THE TARGET. EFFECTIVE ARTILLERY FIRES REQUIRE AN **ACCURATE** AND **COMPLETE** FIRING CHART.



QUESTIONS

RULES OF THE FDC

- NO SMOKING.
- NO EATING OR DRINKING.
- KEEP HANDS AND EQUIPMENT CLEAN.
- ALWAYS STAND WHILE WORKING ON A FIRING CHART!!!

QUESTIONS

DUTIES OF THE HORIZONTAL CONTROL OPERATOR (HCO)

- **CONSTRUCT THE PRIMARY FIRING CHART.**
- **DETERMINES AND ANNOUNCES CHART DATA.**
  - **THREE ELEMENTS OF CHART DATA**
    1. **CHART RANGE (RG)**
    2. **CHART DEFLECTION (DF)**
    3. **ANGLE T**

Questions ?

PLOTTING EQUIPMENT INVENTORY

- PRESSBOARD
- GRID SHEET
- RDP
- PLOTTING SCALE
- MASKING TAPE
- PLOTTING PINS

- GUM ERASER
- PENCILS
  - 3H/4H
  - 5H/6H
  - BLUE / RED
  - GREEN
- SANDING BOARD

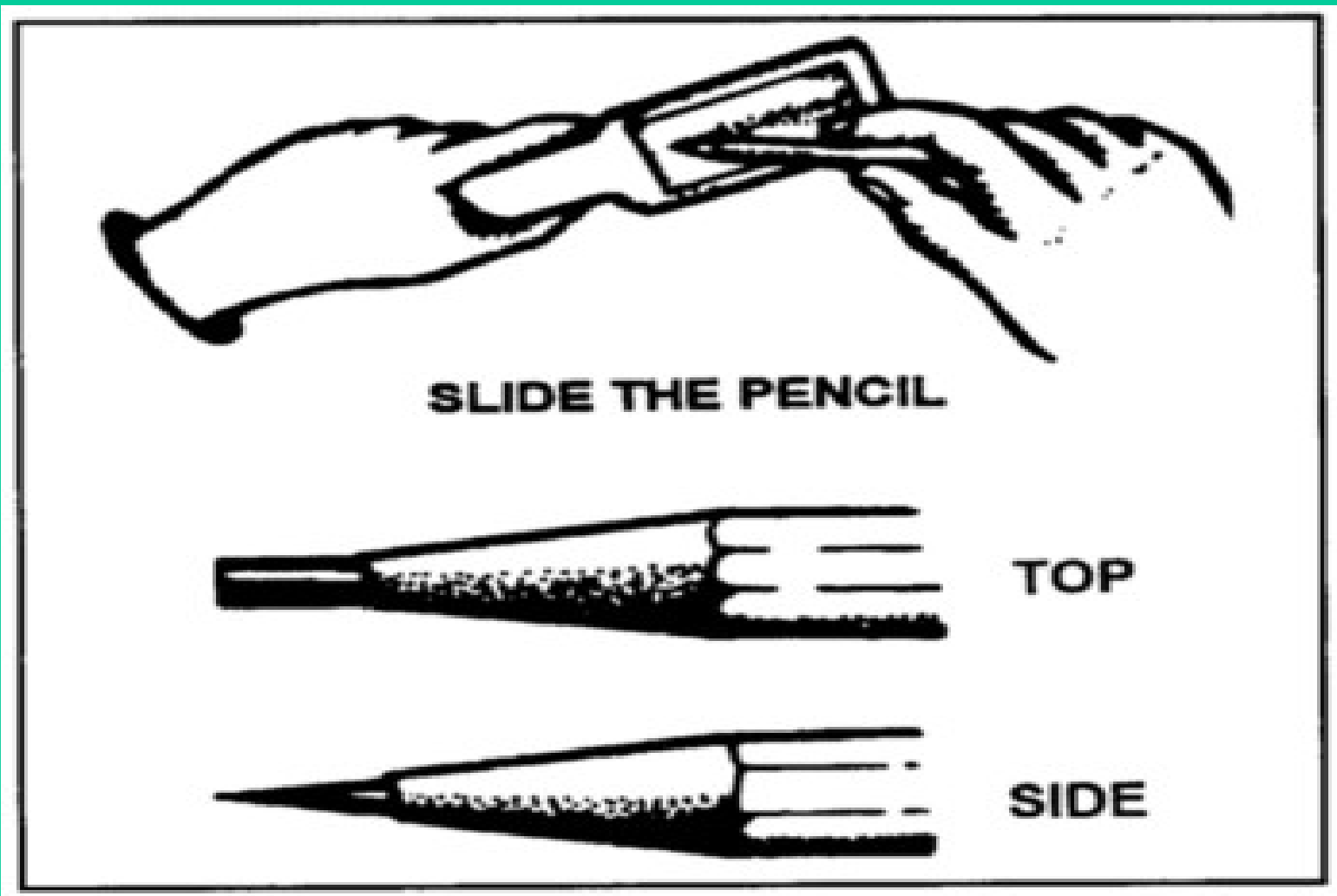


Figure 6-1. The 6H Pencil (Wedge Point).

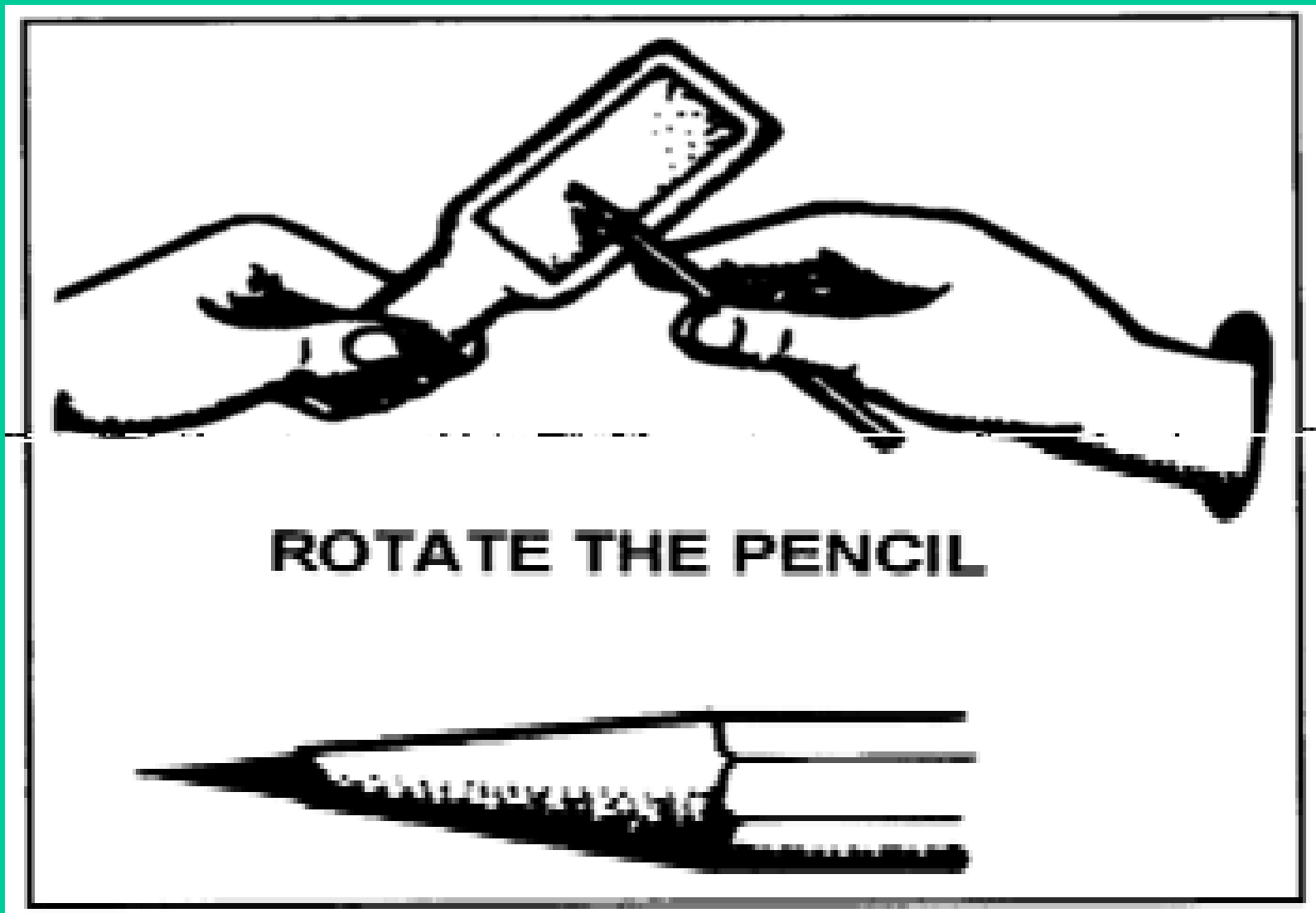


Figure 6-2. The 4H Pencil (Conical Point).

QUESTIONS

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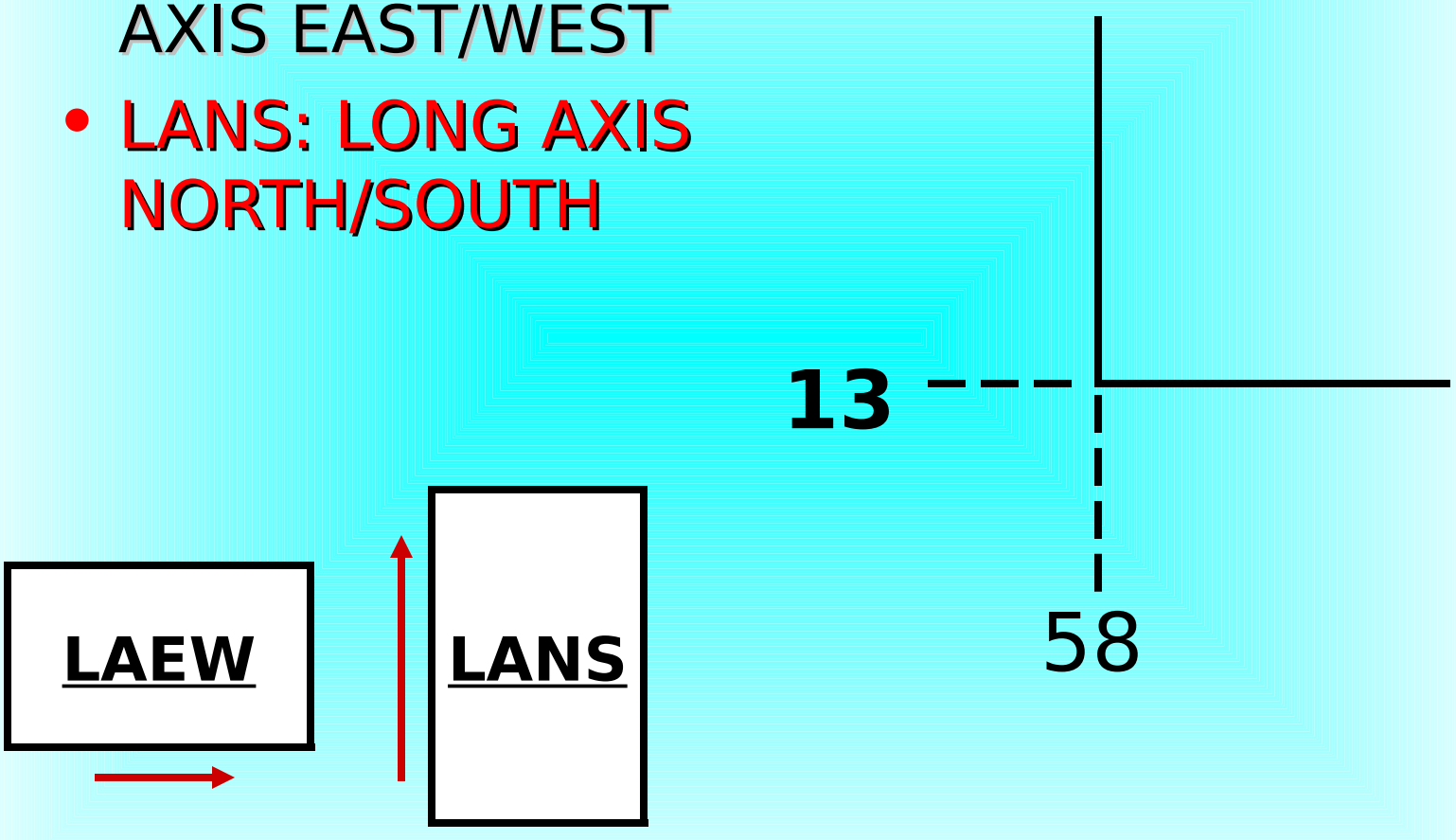
TAKE 10 MIN BREAK

FIRING CHART CONSTRUCTION

- LAEW: LONG AXIS EAST/WEST
- LANS: LONG AXIS NORTH/SOUTH

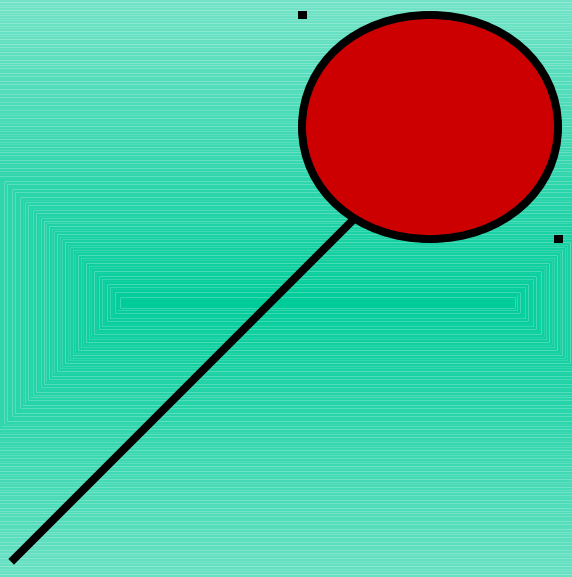
- LLHC: 5813



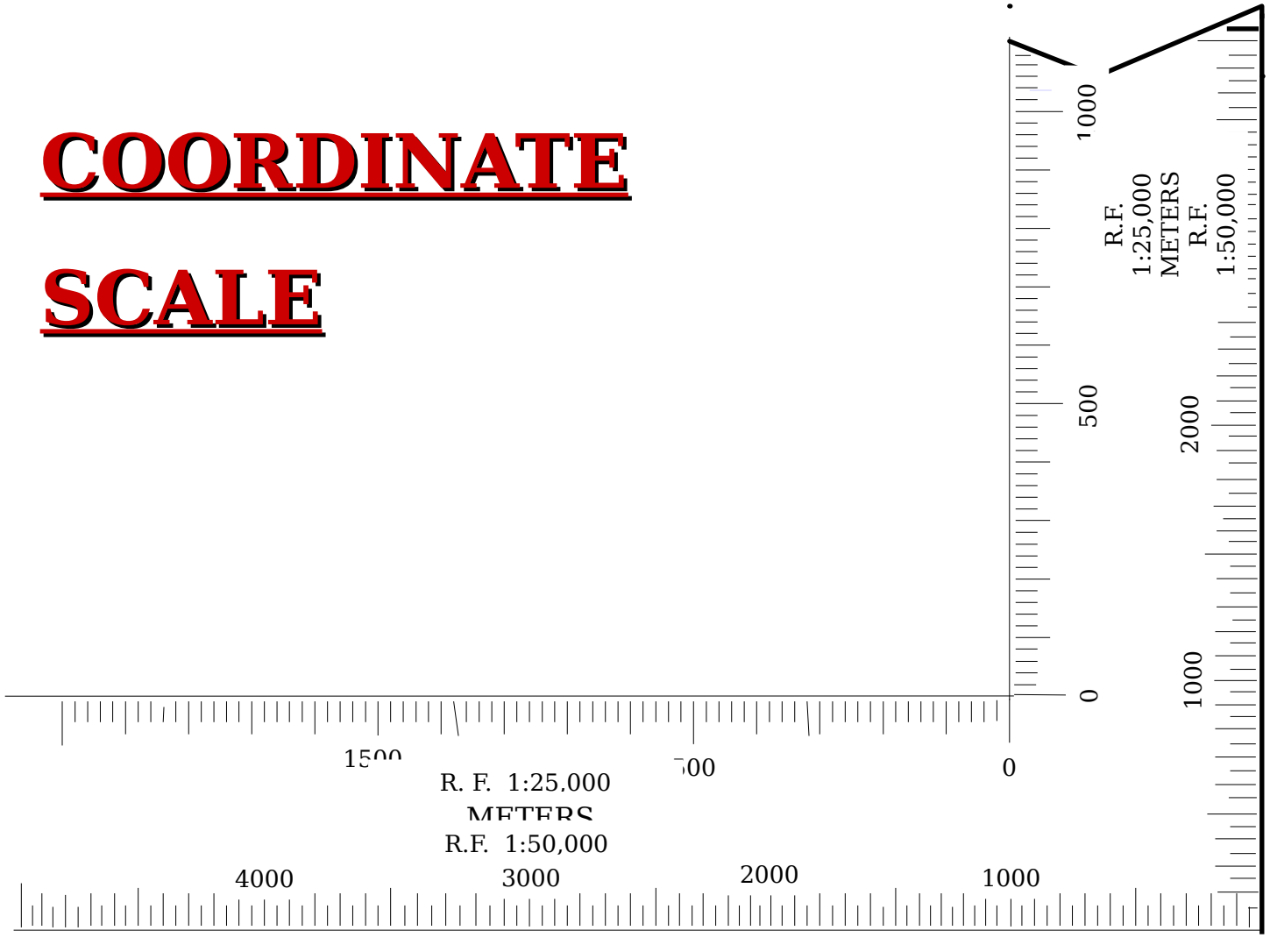
PLOT ESSENTIAL LOCATIONS

- FIRING BATTERY LOCATIONS.
- OBSERVERS.
- PREPLANNED TARGETS.
- PREVIOUSLY FIRED UPON TARGETS.
- KNOWN POINTS.
- REGISTRATION POINTS.

PLOTTING PW



COORDINATE SCALE



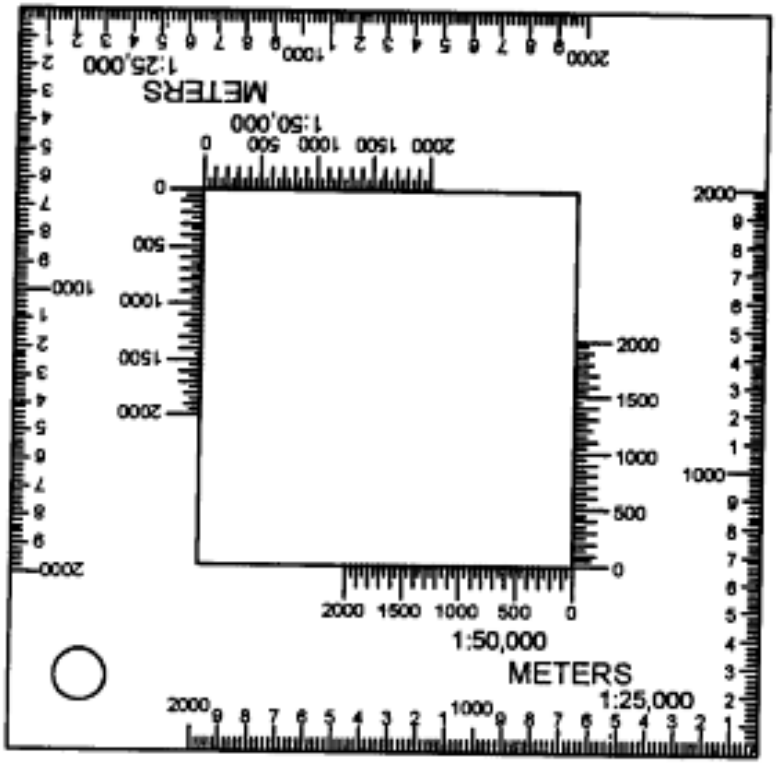


Figure 6-3. Plotting Scale.

4 STEP PLOTTING METHOD

1. Place a plotting pin in the upper right-hand corner of the grid square where the point is to be plotted. This pin will prevent the incorrect plotting of the point in the wrong grid square.
2. Place the plotting scale along the left edge of the grid square so that zero (0) on the bottom scale is at the lower left-hand corner of the grid square.

4 STEP PLOTTING METHOD

3. **Slide the plotting scale to the right, and read the easting on the plotting scale by using the north-south (vertical) grid line as an index.**
4. **With the bottom edge of the plotting scale aligned precisely on the east-west (horizontal) grid line, remove the pin from the upper right-hand corner and plot the northing on the vertical scale with the plotting pin. Set the pin at a 45 degree slant, slide the plotting scale away, rotate the head of the pin vertical and push into place.**

QUESTIONS
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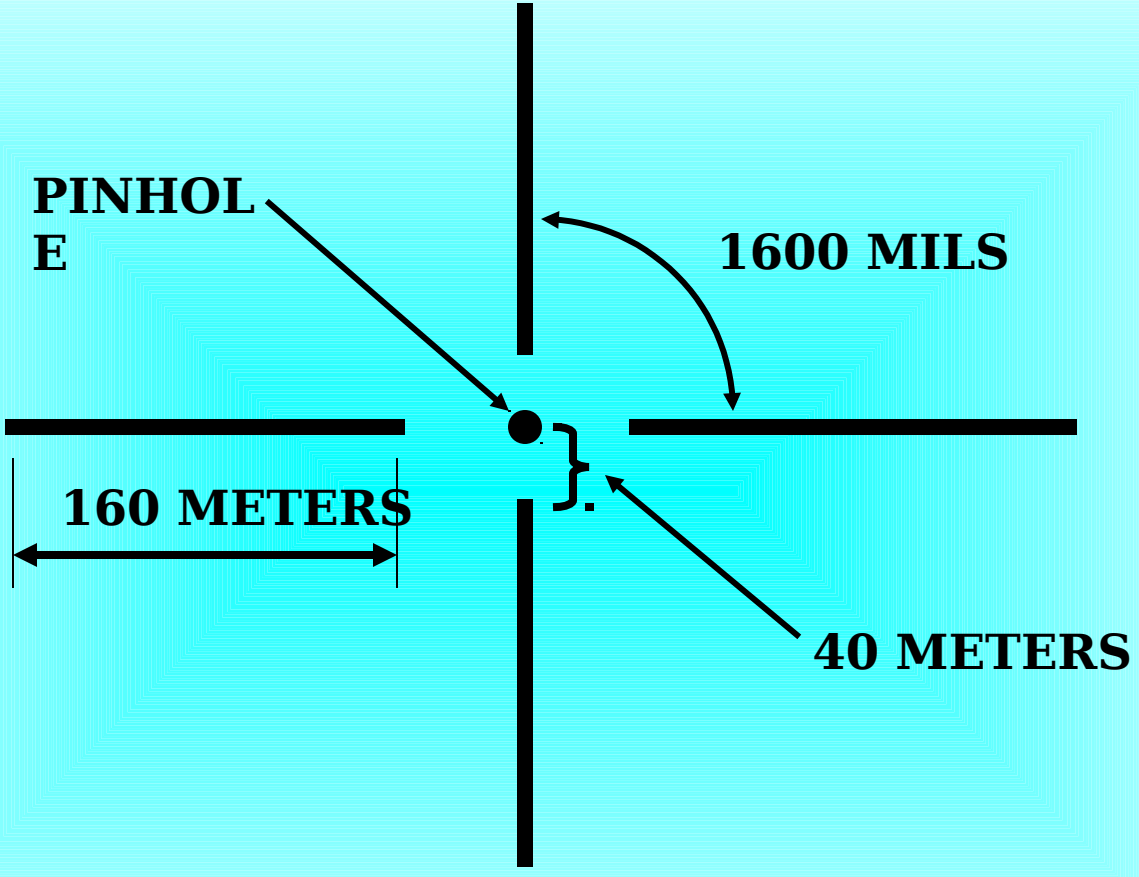
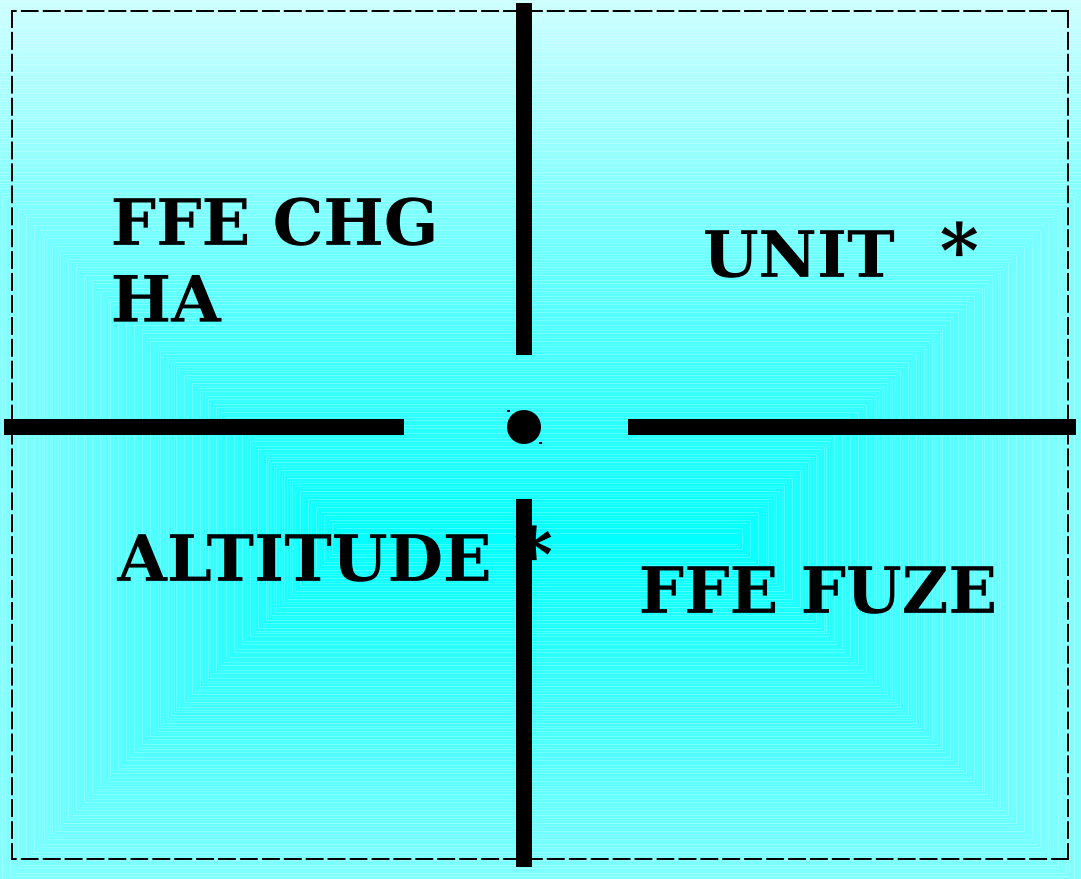
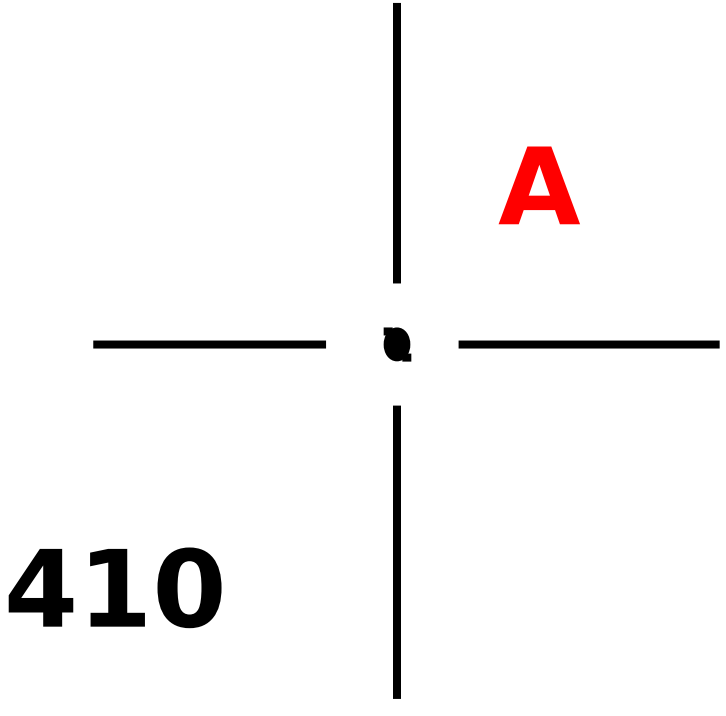


USE THE 3-5-7 RULE



* **REQUIRED**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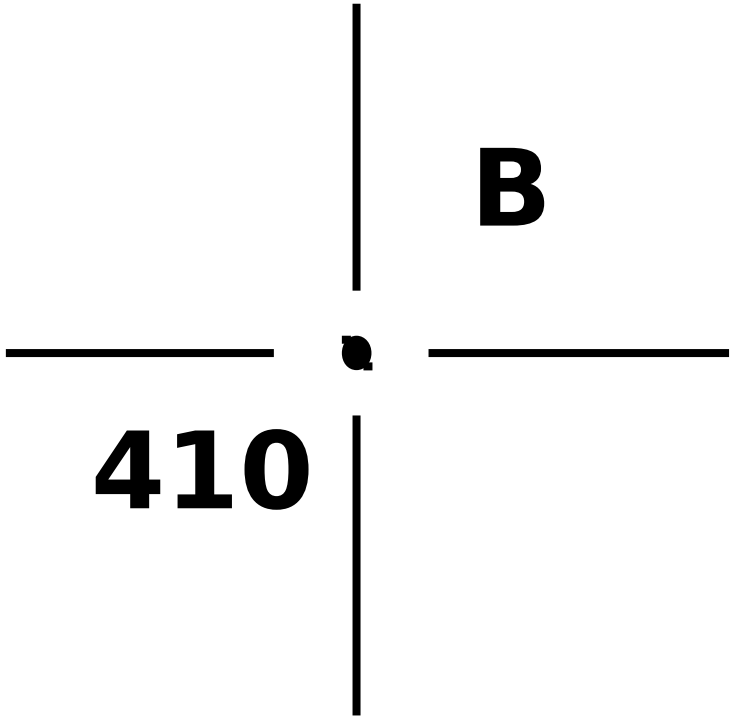
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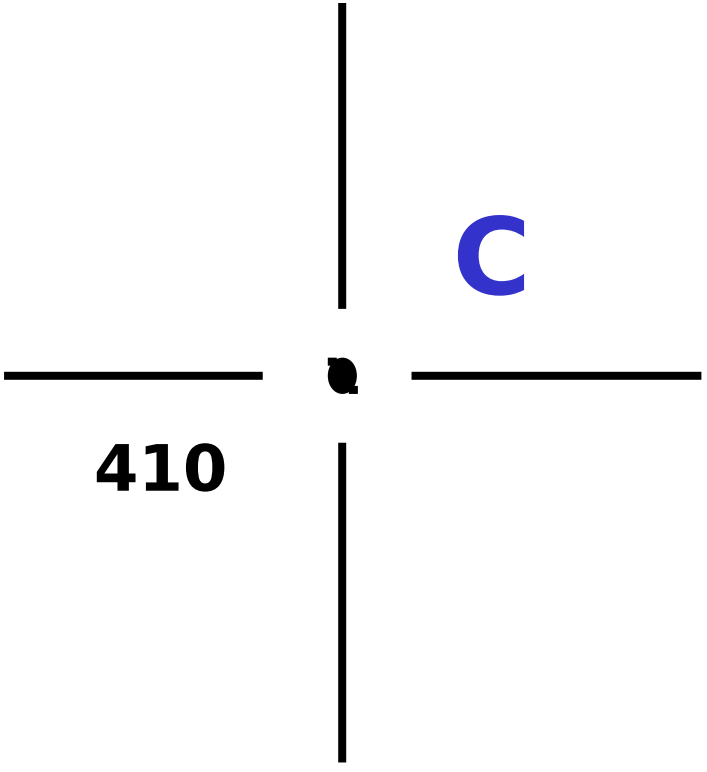
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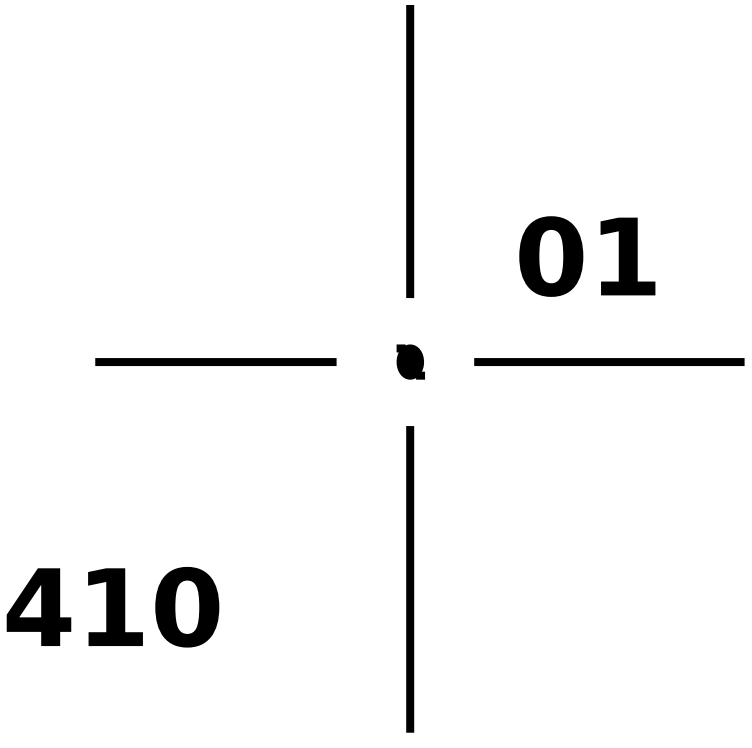
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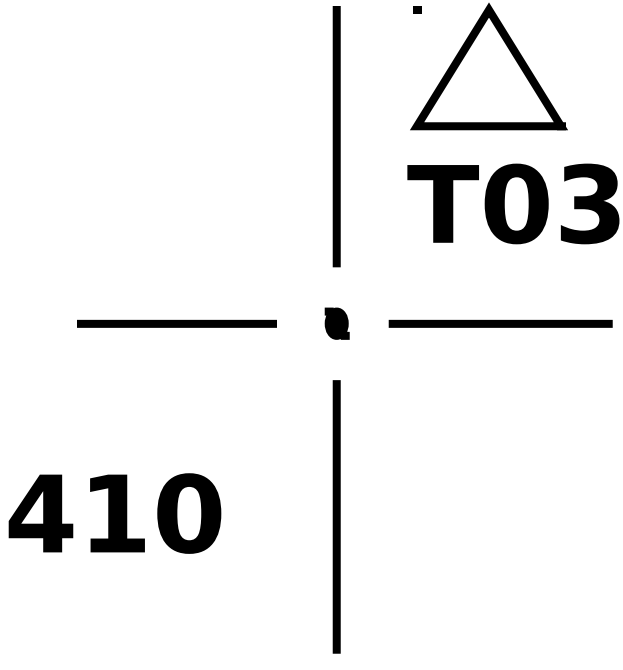
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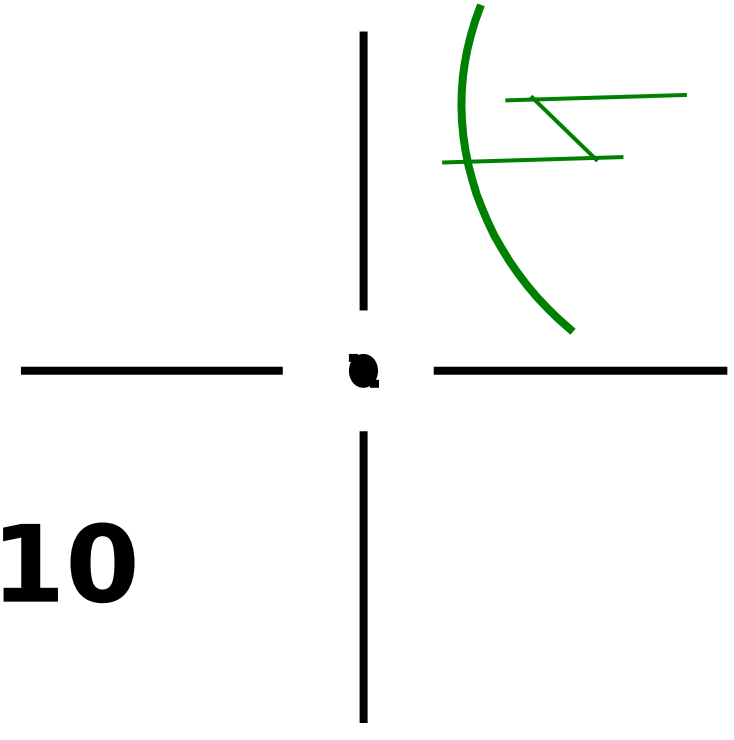
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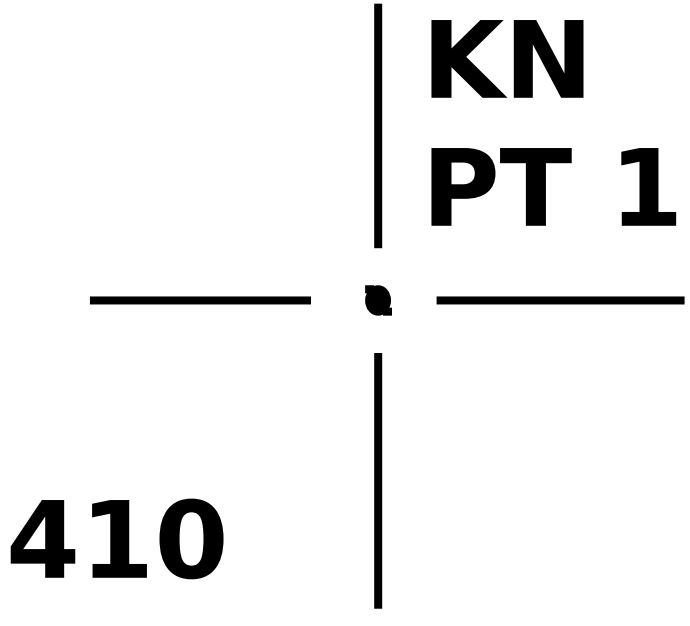
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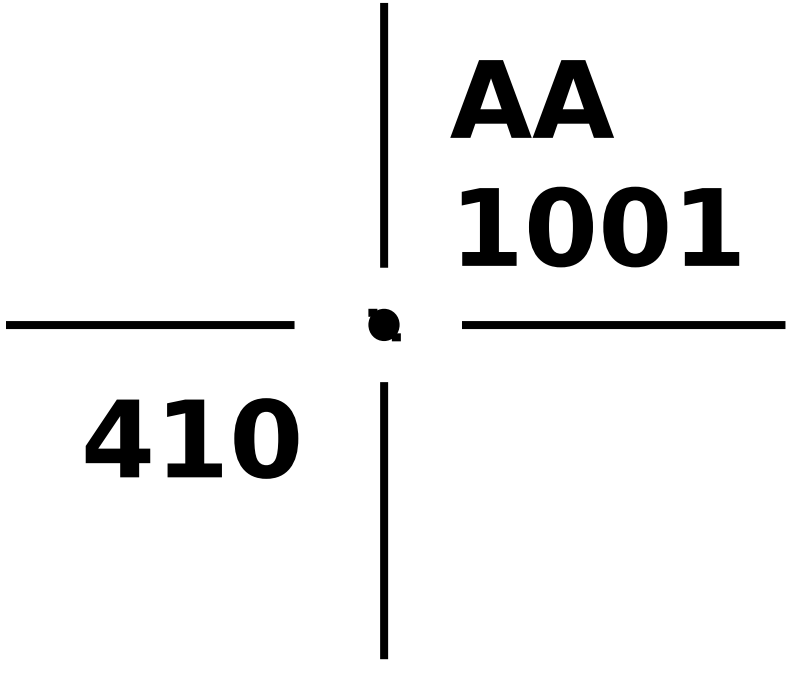
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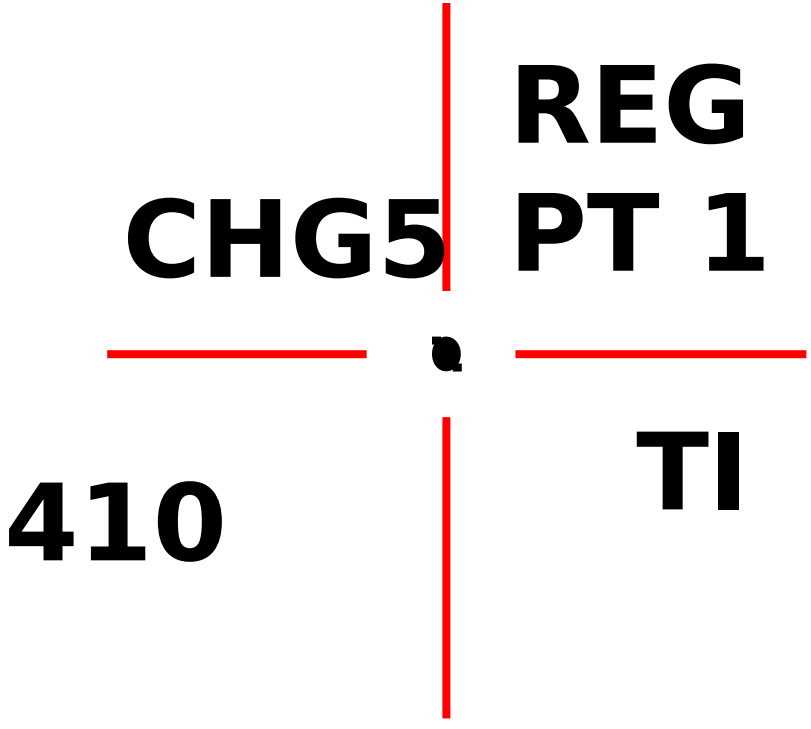
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METHODS OF TARGET LOCATION

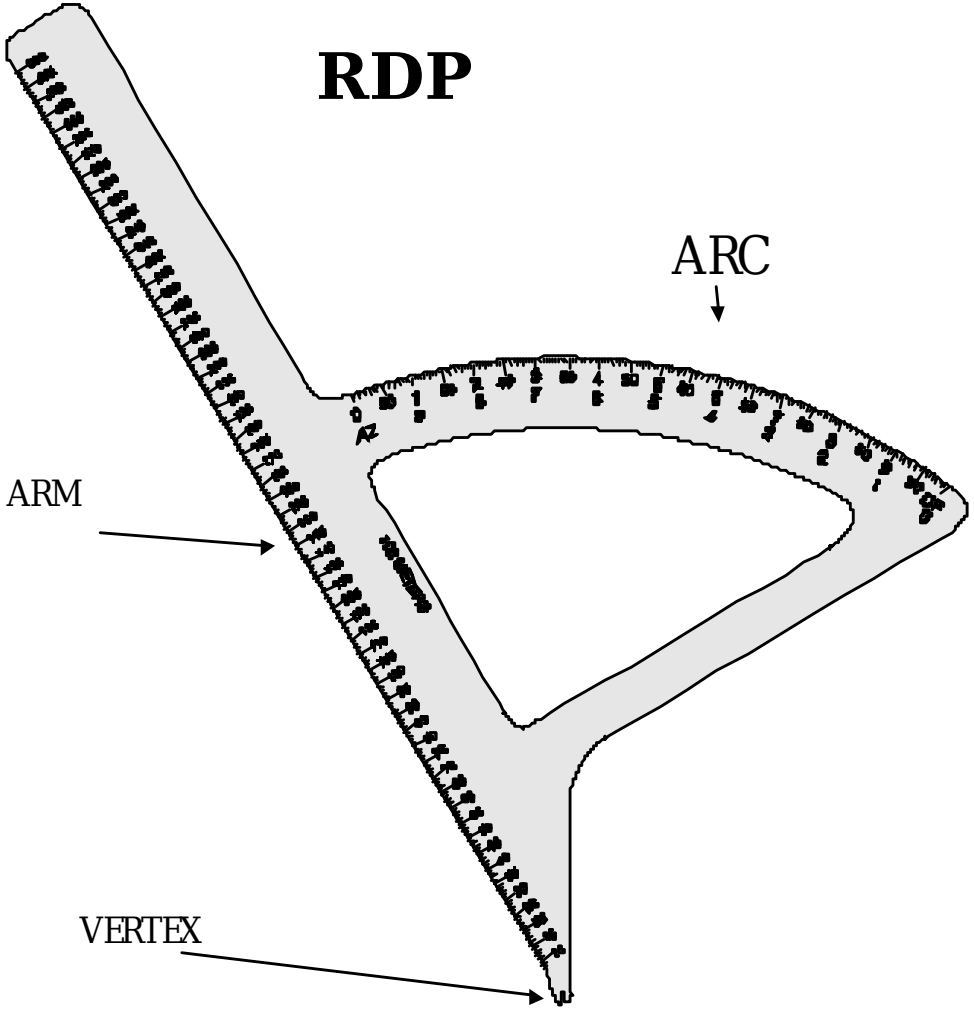
- **GRID METHOD**
  - 6 OR 8 DIGIT GRID
  - DIRECTION FROM HIS LOCATION TO THE TARGET
- **SHIFT FROM A KNOWN POINT**
  - KNOWN POINT
  - DIRECTION FROM HIS LOCATON TO THE TARGET
  - LATERAL DEVIATION
  - RANGE DEVIATION

METHODS OF TARGET LOCATION (CONT)

- **POLAR PLOT**
  - DIRECTION FROM HIS LOCATION TO THE TARGET
  - DISTANCE FROM HIS LOCATION TO THE TARGET

! DIRECTION FROM THE OBSERVER'S LOCATION TO THE TARGET IS USED IN EVERY METHOD OF TARGET LOCATION

RDP



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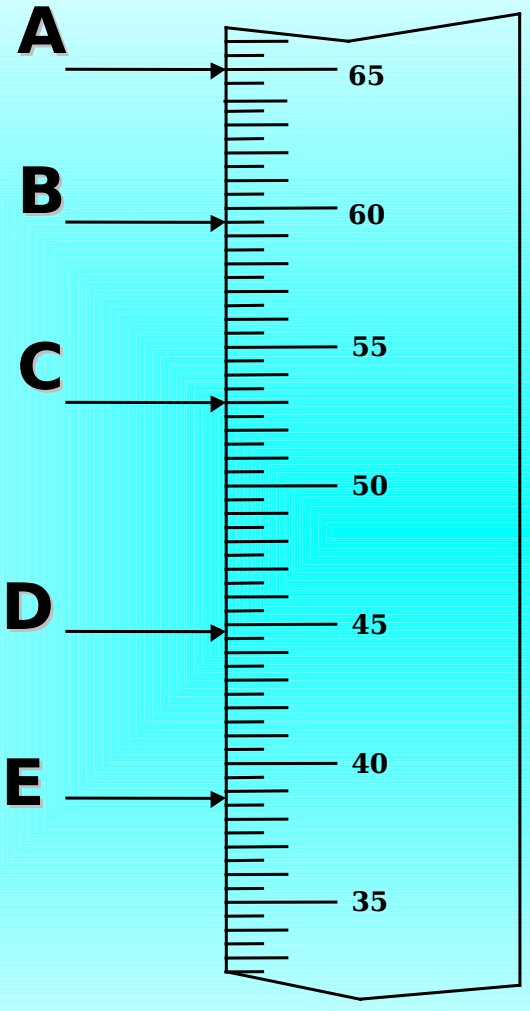
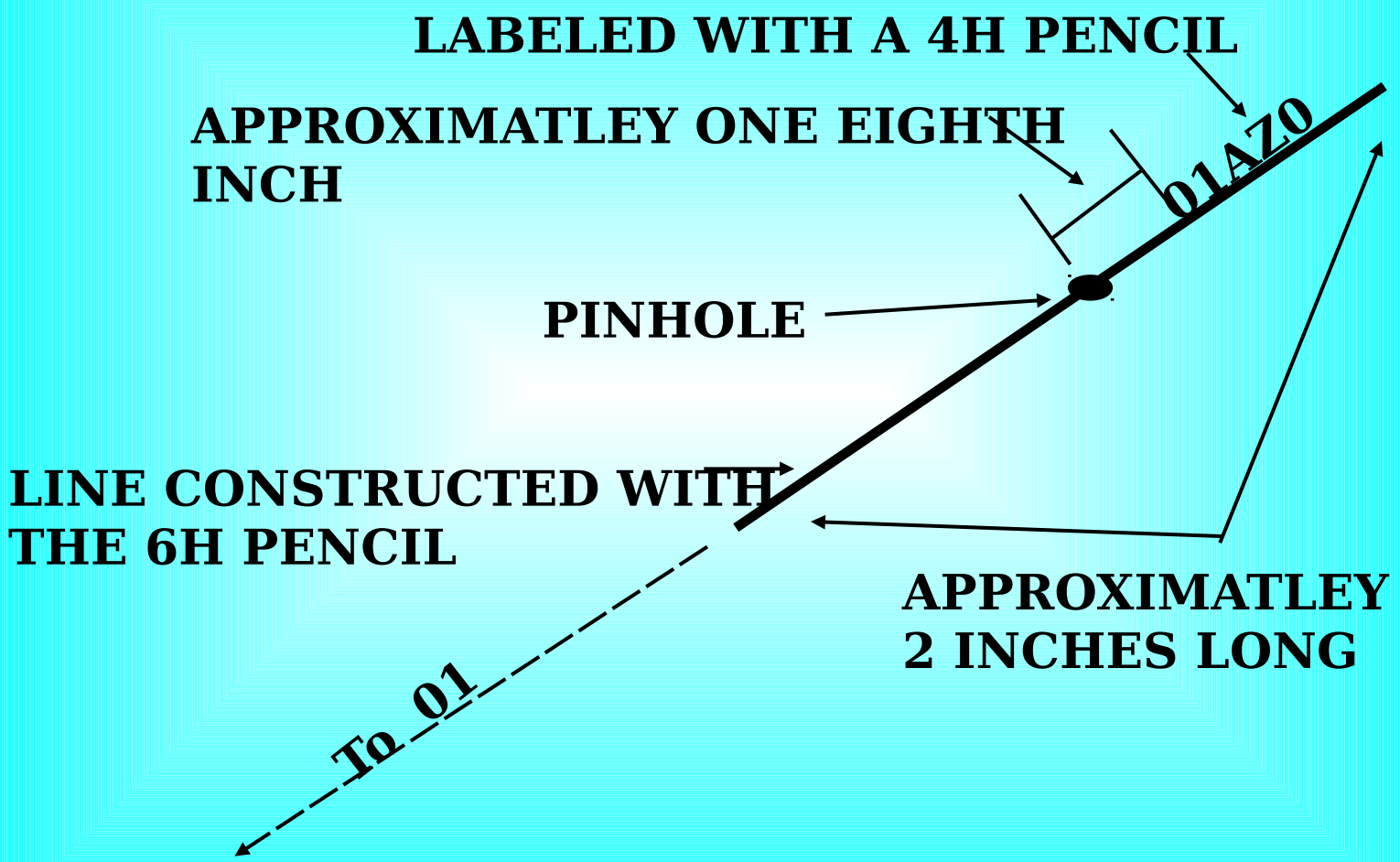


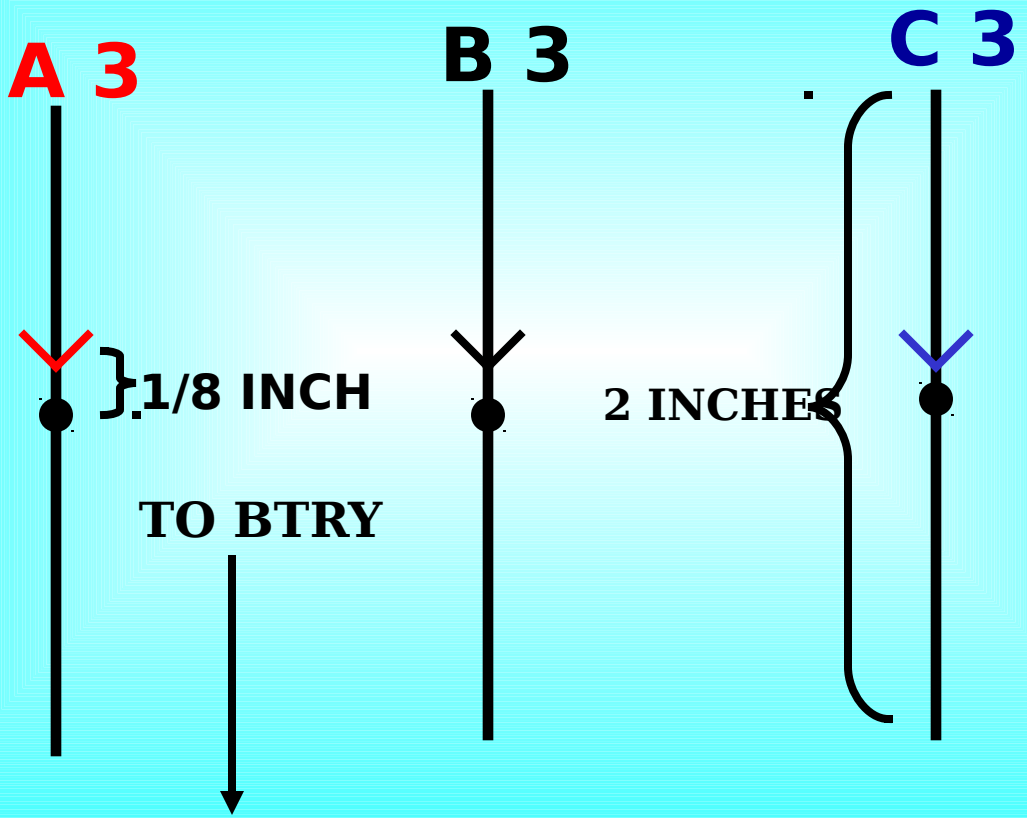
ARM

GD41FC TP-10

AZIMUTH INDEX



DEFLECTION INDEXES



TIME TO WORK PE'S